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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/791,004 | 03/02/2004 | Xiaohua Shi | 20002/18496 | 1278 |
| 34431 7590 10/22/2008 HANLEY, FLIGHT & ZIMMERMAN, LLC 150 S. WACKER DRIVE SUITE 2100 CHICAGO, IL 60606 | | | | |
| EXAMINER | | | | |
| NAHAR, QAMRUN | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 2191 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 10/22/2008 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/791,004

Applicant(s)

SHI ET AL.

Examiner

QAMRUN NAHAR

Art Unit

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the pre-appeal brief filed on 06/06/08.
2. The rejection under 35 U.S.C. 102(e) as being anticipated by Ruf (U.S. 6,665,865) to claims 1-24 is moot in view of new ground(s) of rejection.
3. Claims 1-24 are pending.

Specification

4. As previously indicated in the previous Office Action (Mailed on 05/24/2007, par. 3), the use of the trademark JAVA has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hertling (US 2002/0188935) in view of Ruf (U.S. 6,665,865).

Per Claim 1:

Hertling teaches determining an age of an equivalence class; and updating the equivalence class based on the age of the equivalence class (“... determine the age of the required class file ... if the class file is older than acceptable age, a more recent version of the class file will be sought on the class file repository. ...” in par. 0024). Hertling does not explicitly teach cloning the equivalence class. However, Ruf teaches cloning the equivalence class (“... The following actions are employed in determining whether to create a new copy of a method: ... 4. If the new procedure signature has not been encountered before, create a new copy of the method for later optimization and enqueue a request to specialize the copy of the new procedure signature. The call site is also modified to invoke the appropriate specialized procedure.” in column 15, line 39 to column 16, line 3).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Hertling to include cloning the equivalence class using the teaching of Ruf. The modification would be obvious because one of ordinary skill in the art would be motivated to perform an alias analysis on a program using a compact, equivalence-class-based representation (Ruf, column 2, lines 12-15).

Per Claim 2:

The rejection of claim 1 is incorporated, and Ruf further teaches wherein the equivalence class is associated with an escape analysis (column 6, lines 8-20).

Per Claim 3:

The rejection of claim 1 is incorporated, and Hertling further teaches wherein determining the age of the equivalence class includes an initialization operation (par. 0014, lines 1-5).

Per Claim 4:

The rejection of claim 1 is incorporated, and Hertling further teaches wherein determining the age of the equivalence class includes incrementing the age of the equivalence class in response to a cloning operation (par. 0022).

Per Claim 5:

The rejection of claim 1 is incorporated, and Hertling further teaches wherein determining the age of the equivalence class includes selecting the age of the equivalence class to be a greater age of first and second ages associated with respective merged equivalence classes (par. 0020).

Per Claim 6:

The rejection of claim 1 is incorporated, and Ruf further teaches wherein cloning the equivalence class based on the age of the equivalence class includes associating the equivalence class with one of an old equivalence class and a young equivalence class (column 9, lines 62-67).

Per Claim 7:

The rejection of claim 6 is incorporated, and Hertling further teaches further comprising associating the equivalence class with the old equivalence class in response to the age of the equivalence class being greater than or equal to an age threshold (par. 0021).

Per Claim 8:

The rejection of claim 6 is incorporated, and Hertling further teaches further comprising associating the equivalence class with the young equivalence class in response to the age of the equivalence class being less than an age threshold (par. 0021).

Per Claims 9-16:

These are system versions of the claimed method discussed above (claims 1-8, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per Claims 17-24:

These are machine accessible medium versions of the claimed method discussed above (claims 1-8, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Conclusion

7. Any inquiry concerning this communication from the examiner should be directed to Qamrun Nahar whose telephone number is (571) 272-3730. The examiner can normally be reached on Mondays through Thursdays from 9:00 AM to 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y Zhen, can be reached on (571) 272-3708. The fax phone number for the organization where this application or processing is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Qamrun Nahar/
Qamrun Nahar
October 22, 2008